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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,065	09/05/2003	Jang-Kun Song	AB-1336 US	8333

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EXAMINER	
TON, MINH TOAN T	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EJC

Office Action Summary	Application No.	Applicant(s)	
	10/656,065	SONG, JANG-KUN	
	Examiner	Art Unit	
	Toan Ton	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-14 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Objections

1. Claim 2 is objected to because of the following informalities: --with respect to each other-- after "15-45 degrees". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-5, 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 6603526).

Kim discloses a liquid crystal display comprising (see at least Figure 5 and its disclosure): a first substrate; a gate line and a data line formed on the first substrate and intersecting each other; a plurality of common electrodes separated from the gate line and the data line and making an angle of about 2-30° (overlapping Applicant's claimed range 7-23°) with the gate line; a plurality of pixel electrodes separated from the gate line, the data line, and the common electrodes, extending parallel to the common electrodes, and alternately arranged with the common electrodes; a thin film transistor connected to the gate line, the data line, and the pixel electrodes; a second substrate; and a liquid crystal layer interposed between the first substrate and the second substrate.

It is noted that overlapping ranges have been held at least obvious to one of ordinary skill in the art. Further, it would have been have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a plurality of common electrodes separated from the gate line and the data line and making an angle at least overlapping Applicant's claimed range 7-23° with the gate line for achieving advantages such as high aperture ratio, improved picture quality.

Kim discloses the device comprising a connecting electrode connecting the common electrodes and a common electrode line extending parallel to the gate line and connected to the connecting electrode (see at least Figure 5).

Kim discloses the device comprising a pixel electrode line (e.g., 24a) connecting the pixel electrodes and extending parallel to the data lines.

Kim discloses the pixel electrodes comprising third and fourth electrodes extending parallel to the first and the second electrodes, respectively (see at least Figure 5).

Kim discloses the device comprising a frame connecting the common electrode (see at least Figure 5).

The use of a redundant bus line is common and known in the art for achieving advantages such as replacing/repairing bus line if imperfections exist (e.g., disconnected/shorted bus line) resulting a defective display device. Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a redundant bus line, as common and known in the art, for achieving advantages such as replacing/repairing bus line if imperfections exist (e.g., disconnected/shorted bus line) that results in a defective display device.

The use of a contact assistant/ohmic layer is common and known in the art for achieving advantages such as improving the reliability of the connection between layers (e.g., semiconductor layer and data line). Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ to employ a contact assistant/ohmic layer, as common and known in the art, for achieving advantages such as improving the reliability of the connection between layers (e.g., semiconductor layer and data line).

The use of a passivation layer in a thin film transistor array device is common and known in the art for achieving advantages such as providing a sufficient insulation between layers. Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a passivation layer, as common and known in the art, for achieving advantages such as a sufficient insulation between layers.

Employing the semiconductor layer having substantially the same planar shape as the data line and the pixel electrode line and the ohmic contact would have been at least obvious to one of ordinary skill in the art at the time the invention was made for achieving advantages such as simplifying/reducing manufacturing steps (i.e., cost-reduction).

4. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US 6603526).

Lee discloses a liquid crystal display comprising (see at least Figures 3-4 and their disclosure): a first substrate; a gate line and a data line formed on the first substrate and intersecting each other; a plurality of common electrodes separated from the gate line and the

data line and making an angle at least overlapping Applicant's claimed range 7-23° with the gate line; a plurality of pixel electrodes separated from the gate line, the data line, and the common electrodes, extending parallel to the common electrodes, and alternately arranged with the common electrodes; a thin film transistor connected to the gate line, the data line, and the pixel electrodes; a second substrate; and a liquid crystal layer interposed between the first substrate and the second substrate.

Lee discloses the device comprising the common electrodes having first and second electrodes making an angle of about 0-45 degrees (overlapping at least Applicant's claimed range of 15-45 degrees) with each other.

It is noted that overlapping ranges have been held at least obvious to one of ordinary skill in the art. Further, it would have been have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a plurality of common electrodes separated from the gate line and the data line and making an angle at least overlapping Applicant's claimed range 7-23° with the gate line, the common electrodes having first and second electrodes making an angle of at least overlapping about 15-45° for achieving advantages such as preventing occurrence of color shift, improved picture quality.

Lee discloses the device comprising a connecting electrode connecting the common electrodes and a common electrode line extending parallel to the gate line and connected to the connecting electrode (see at least Figures 3-4).

Lee discloses the device comprising a pixel electrode line connecting the pixel electrodes and extending parallel to the data lines (see at least Figures 3-4).

Lee discloses the pixel electrodes comprising third and fourth electrodes extending

parallel to the first and the second electrodes, respectively (see at least Figure 5).

Lee discloses the device comprising a frame connecting the common electrode (see at least Figures 3-4).

The use of a redundant bus line is common and known in the art for achieving advantages such as replacing/repairing bus line if imperfections exist (e.g., disconnected/shorted bus line) resulting a defective display device. Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a redundant bus line, as common and known in the art, for achieving advantages such as replacing/repairing bus line if imperfections exist (e.g., disconnected/shorted bus line) that results in a defective display device.

The use of a contact assistant/ohmic layer is common and known in the art for achieving advantages such as improving the reliability of the connection between layers (e.g., semiconductor layer and data line). Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ to employ a contact assistant/ohmic layer, as common and known in the art, for achieving advantages such as improving the reliability of the connection between layers (e.g., semiconductor layer and data line).

The use of a passivation layer in a thin film transistor array device is common and known in the art for achieving advantages such as providing a sufficient insulation between layers. Therefore, it would have been at least obvious to one of ordinary skill in the art at the time the invention was made to employ a passivation layer, as common and known in the art, for achieving advantages such as a sufficient insulation between layers.

Employing the semiconductor layer having substantially the same planar shape as the data line and the pixel electrode line and the ohmic contact would have been at least obvious to one of ordinary skill in the art at the time the invention was made for achieving advantages such as simplifying/reducing manufacturing steps (i.e., cost-reduction).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Ton whose telephone number is (571) 272-2303.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 16, 2006

TOAN TON
PRIMARY EXAMINER